HARTFORD FLOOD CONTROL

SOUTH MEADOWS, NORTH MEADOWS, ARMORY· HARTFORD · CT

HIGHEST PRIORITY PUMPING STATION IMPROVEMENTS-REBID

CITY OF HARTFORD - CONTRACT DPW #14-43

JULY, 2014

PREPARED FOR

CITY OF HARTFORD
550 MAIN STREET
HARTFORD CT 06103

PREPARED BY

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

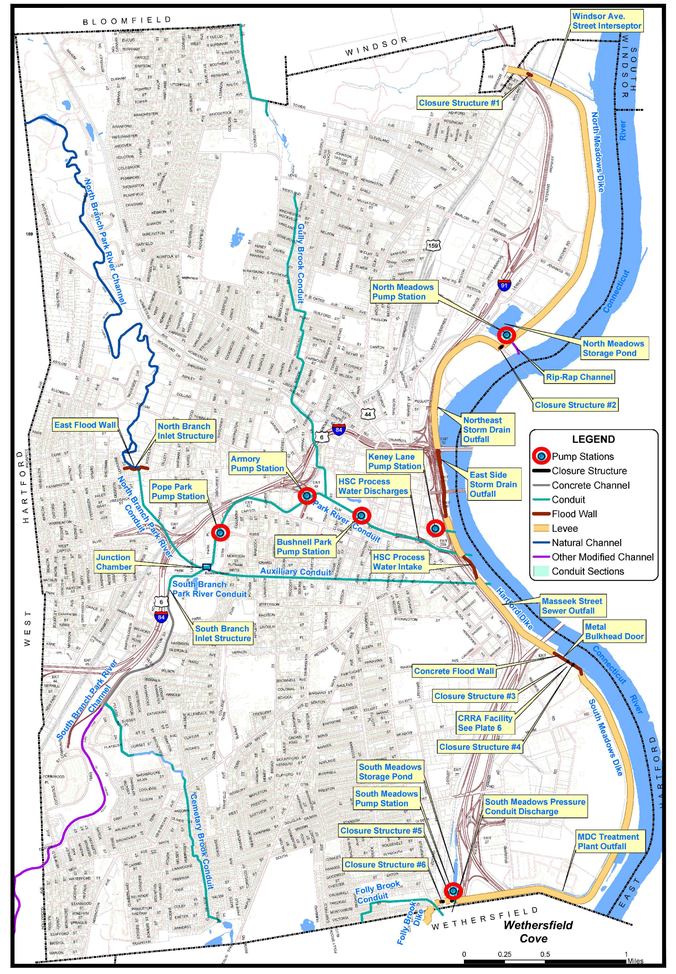
PUMPING STATION LOCATIONS:

South Meadows Pumping Station
(Behind 1010 Wethersfield Avenue)

North Meadows Pumping Station
Intersection of Jennings Road and Leibert Road
(next to Connecticut Transit Building)

Armory Pumping Station
Capitol Avenue and Broad Street
(Behind the Legislative Office Building Parking Garage)

SHEET INDEX



LOCATION MAP
SCALE: NTS

PROJ. No.: 01997279.F75
DATE: JULY 2014

GI-001

Hartford Flood Control Pump Stations - Pump & Bearing Information

	Location	Manufacturer	Type	Size (inches)	Year	Pump ID	RPM	HP	Flow Rate (GPM)	Head (ft)	Order #	Pump Shaft Seal Type	Steady Bearing Preliminary Assessment (See Note 4)	Upper Pump Bearing Preliminary Assessment (See Note 4)	Lower Pump Bearing Preliminary Assessment (See Note 4)	
NOT IN CONTRACT (NIC)	South Meadows	Morris Machine Works	Vane Axial	36	1929	S-P1	550	650	35000	37.5	120668	Note 1				NOT IN CONTRACT (NIC)
	South Meadows	Morris Machine Works	Vane Axial	36	1929	S-P2	550	650	35000	37.5	120667	Note 1	Normal	N/A	Minor	
BASE BID	South Meadows	Morris Machine Works	Vertical Mixed Flow	36	1956	S-P3	340	400	36000	37	9874	Note 1	N/A	Minor	Minor	BASE BID
BASE BID	South Meadows	Morris Machine Works	Vertical Mixed Flow	36	1956	S-P4	340	400	36000	37	9874	Note 1	N/A	Moderate	Normal	BASE BID
NOT IN CONTRACT (NIC)	South Meadows	Morris Machine Works	Vane Axial	36	1929	S-P5	550	450	35000	37.5	120666	Note 1				NOT IN CONTRACT (NIC)
	South Meadows	Morris Machine Works	Vane Axial	36	1929	S-P6	550	450	35000	37.5	120665	Note 1	Normal	N/A	Normal	
NOT IN CONTRACT (NIC)	North Meadows	Morris Machine Works	Vertical Mixed Flow	36	1956	N-P1	340	410	36000	38	K9876	Note 2	None	Normal	Normal	NOT IN CONTRACT (NIC)
	North Meadows	DeLaval Steam Turbine Co.	Centrifugal Non Clog	36	1939	N-P2	340	244	35000	20	229683	Note 2	Extreme	Normal	Normal	
BASE BID	North Meadows	DeLaval Steam Turbine Co.	Centrifugal Non Clog	36	1939	N-P3	340	244	35000	20	229684	Note 2	Moderate	Normal	Normal	BASE BID
	North Meadows	DeLaval Steam Turbine Co.	Centrifugal Non Clog	36	1939	N-P4	340	244	35000	20	229685	Note 2	Extreme	Moderate	Moderate	
	North Meadows	DeLaval Steam Turbine Co.	Centrifugal Non Clog	16	1939	N-P5	585	25	5000	13	229686	Note 2				
	Keney Lane	Morris Machine Works	Vertical Mixed Flow	36	1944	K-P1	286	250	25000	30	E-9344	Note 1	Not Accessible	Normal	Normal	
	Keney Lane	Morris Machine Works	Vertical Mixed Flow	36	1944	K-P2	286	250	25000	30	E-9345	Note 1	Not Accessible	Normal	Normal	
	Keney Lane	Morris Machine Works	Vertical Mixed Flow	36	1944	K-P3	286	250	25000	30	E-9346	Note 1	Not Accessible	Normal	Normal	
	Keney Lane	Morris Machine Works	Vertical Mixed Flow	16	1944	K-P4	600	46	3500	30	E-9348	Note 1	Not Accessible	Normal	Normal	
NOT IN CONTRACT (NIC)																NOT IN CONTRACT (NIC)
	Bushnell Park	Morris Machine Works	Vertical Mixed Flow	30	1944	B-P1	365	160	18000	28	E9350	Note 1	N/A	N/A	N/A	
	Bushnell Park	Morris Machine Works	Vertical Mixed Flow	30	1944	B-P2	365	160	18000	28	E9351	Note 1	N/A	N/A	N/A	
	Bushnell Park	Morris Machine Works	Vertical Mixed Flow	30	1944	B-P3	365	160	18000	28	E9352	Note 1	N/A	N/A	N/A	
	Bushnell Park	Morris Machine Works	Vertical Mixed Flow	16	1944	B-P4	600	53	3500	28	E9353	Note 1	N/A	N/A	N/A	
	Armory	Worthington Pump and Machinery Corporation	Centrifugal Non Clog	24	1980	A-P1	500	152	18000	29.1	77Z001465-1	Note 3	N/A	N/A	N/A	
BASE BID	Armory	Worthington Pump and Machinery Corporation	Centrifugal Non Clog	24	1980	A-P2	500	152	18000	29.1	77Z001465-2	Note 3	N/A	N/A	N/A	BASE BID
	Armory	Worthington Pump and Machinery Corporation	Centrifugal Non Clog	24	1980	A-P3	500	152	18000	29.1	77Z001465-3	Note 3	N/A	N/A	N/A	
NOT IN CONTRACT (NIC)	Pope Park	Worthington Pump and Machinery Corporation	Centrifugal Non Clog	20	1980	P-P1	550	85	11250	23.3	77Z001464-1	Note 3	N/A	N/A	N/A	NOT IN CONTRACT (NIC)
	Pope Park	Worthington Pump and Machinery Corporation	Centrifugal Non Clog	20	1980	P-P2	550	85	11250	23.3	77Z001464-2	Note 3	N/A	N/A	N/A	
	Pope Park	Worthington Pump and Machinery Corporation	Centrifugal Non Clog	20	1980	P-P3	550	85	11250	23.3	77Z001464-3	Note 3	N/A	N/A	N/A	

Note 1:	The Morris Pump Company Vertical Mixed Flow (VMF) wastewater type pumps were acquired by Yeomans Chicago Corp. (YCC). The water supply style pumps (Vane Axial) were acquired by Goulds Pump Company. YCC does not have drawings of the old Morris Pumps. Goulds may have records, but archives them by S/N, not the nameplate Order Number. A S/N on the pumps has not been located.
Note 2:	DeLaval was acquired by Siemens and continues to support parts and maintenance for these 1939 pumps.
Note 3:	Parts are still available for these Worthington Pumps. A pump seal was replaced within the last 10 years.
Note 4:	See drawings SM-301, NM-302, BP-302, KL-302, PP-302, AP-302 for bearing location details. No preliminary bearing assessments conducted for Bushnell Park, Armory, and Pope Park pumping stations.
Note 5:	South Meadows PS Pump Repair only include Pump 3 and Pump 4 (S-P3 and S-P4, Morris 1956 Vertical Mixed Flow). The other pumps were already repaired by the City.
Note 6:	North Meadows PS Pump 3 (N-P3) is excluded from this pump repair work. It will be repaired through the City's Emergency Operations.

DEAD HEAD PRESSURE OF PUMPS:

1. SOUTH MEADOWS PS = 57 FT.
2. NORTH MEADOWS PS:
   - 2.1. N–P1 = 55 FT
   - 2.2. N–P2, N–P3 & N–P4 = 56 FT
   - 2.3. N–P5 (16 INCH PUMP) = 37 FT
3. KENEY LANE PS = 40 FT
4. BUSHNELL PARK PS = 50 FT
5. ARMORY PS = 51 FT
6. POPE PARK PS = 43 FT

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE: HORZ.: NTS VERT.: NTS
DATUM: HORZ.: VERT.:

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

CITY OF HARTFORD

PUMP LIST

HIGHEST PRIORITY PUMPING STATION IMPROVEMENTS
CONTRACT# DPW14-43
HARTFORD CONNECTICUT

PROJ. No.: 01997279.F75
DATE: JULY 2014

GI-601

Hartford Flood Control Pump Stations - Valve Information

	Gate Callout on Schematic Drawing		Gate Valve Size (inches)	Gate Valve Manufacturer	Casting / ID on Valve Body and/or Bonnet	Valve type	Existing Valve Operator	Existing Valve Controls	Existing Valve Condition (Notes 1 & 2)	Existing Operator Condition (Note 2)	Comments	# of Flange Bolts	Type of Connection: Flange/Flange or Flange/Lead	Valve Face to Face Dim. (a)	Adjacent Spool Length (b)	Maximum Allowable New Valve Length (Note 3)	New Replacement Valve Type	New Replacement Valve Length (c)	New Replacement Spool Size (Note 4) (a+b)-c	
BASE BID	*South Meadows*	S-P1-S	P 1 Suction Valve	36	Chapman	36,L3,50	Wedge	Rotork electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	M	A	New Electric Operators, reportedly problematic	32	Flange/Flange	18.50	26.5	45.00	AWWA	28.00	17.00	BASE BID
	South Meadows	S-P1-D	P 1 Discharge Valve	36	Chapman	36 58 1/2	Double Disc	Rotork electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	?	A	New Electric Operators	32	Flange/Flange	16.00	37.5	53.50	AWWA	28.00	25.50	
	South Meadows	S-P2-S	P 2 Suction Valve	36	Chapman	36,L3,50	Wedge	Rotork electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	?	A	New Electric Operators, clean valve suction	32	Flange/Flange	18.50	26.5	45.00	AWWA	28.00	17.00	
	South Meadows	S-P2-D	P 2 Discharge Valve	36	Fabri-valve		Knife	Auma electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	?	A	New Electric Operators	32	Wafer (w/ 12.75" Spool)	5.63	48.25	53.88	AWWA	28.00	25.88	
	South Meadows	S-P3-S	P 3 Suction Valve	36	Darling	36000, 8-3124,?	Double Disc	Rotork electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	U	U	New Electric Operators, Cannot shut due to debris	32	Lead/Flange	19.75	36.375	56.13	AWWA	28.00	28.13	
	South Meadows	S-P3-D	P 3 Discharge Valve	36	Darling	36000,AR-3139	Double Disc	Rotork electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	M	M	New Electric Operators, Operator reported problems	32	Lead/Flange	19.50	10.75	30.25	AWWA	28.00	2.25	
	South Meadows	S-P4-S	P 4 Suction Valve	36	Darling	NO 0023 43 OWG C3164 1957	Double Disc	Rotork electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	?	A	New Electric Operators, clean valve suction	32	Lead/Flange	19.38	31.5	50.88	AWWA	28.00	22.88	
	South Meadows	S-P4-D	P 4 Discharge Valve	36	Darling	NO 0023 43 OWG (6934?)	Double Disc	Rotork electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	?	A	New Electric Operators	32	Lead/Flange	19.13	11	30.13	AWWA	28.00	2.13	
	South Meadows	S-P5-S	P 5 Suction Valve	36	Chapman	36,L3,50	Wedge	Rotork electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	?	A	New Electric Operators, clean valve suction	32	Flange/Flange	18.50	20.5	39.00	AWWA	28.00	11.00	
	South Meadows	S-P5-D	P 5 Discharge Valve	36	Chapman	36,L3,50	Wedge	Rotork electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	U	A	New Electric Operators, valve leaks	32	Flange/Flange	18.50	35.5	54.00	AWWA	28.00	26.00	
	South Meadows	S-P6-S	P 6 Suction Valve	36	Chapman	36,L3,50	Wedge	Rotork electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	?	A	New Electric Operators, clean valve suction	32	Flange/Flange	18.50	20	38.50	AWWA	28.00	10.50	
	South Meadows	S-P6-D	P 6 Discharge Valve	36	Fabri-valve		Knife	Auma electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	U	A	New Electric Operators, valve leaks	32	Wafer (w/ 12.75" Spool)	5.38	35.5	40.88	AWWA	28.00	12.88	
NOT IN CONTRACT (NIC)	*North Meadows*	N-P1-S	P 1 Suction Valve	36	Chapman	36 58 1/2	Double Disc	Handwheel, non-rising stem	Manual only	?	N/A	Staff never exercise suction valves	32	Lead/Flange	17.25	56.75	74.00	AWWA	28.00	46.00	NOT IN CONTRACT (NIC)
	North Meadows	N-P1-D	P 1 Discharge Valve	36	Chapman	36 58 1/2	Double Disc	Chapman Electrics/ handwheel	O/S/C on engine floor, O/S/C at valve	M	A		32	Lead/Flange	17.25	20	37.25	AWWA	28.00	9.25	
	North Meadows	N-P2-S	P 2 Suction Valve	36	Chapman	36 58 1/2	Double Disc	Handwheel, non-rising stem	Manual only	?	N/A	Staff never exercise suction valves	32	Lead/Flange	17.00	36.5	53.50	AWWA	28.00	25.50	
	North Meadows	N-P2-D	P 2 Discharge Valve	36	Chapman	36 58 1/2	Double Disc	Chapman Electrics/ handwheel	O/S/C on engine floor, O/S/C at valve	M	A	Would not close all the way	32	Lead/Flange	17.25	22.5	39.75	AWWA	28.00	11.75	
	North Meadows	N-P3-S	P 3 Suction Valve	36	Chapman	36 58 1/2	Double Disc	Handwheel, non-rising stem	Manual only	?	N/A	Staff never exercise suction valves	32	Lead/Flange	17.13	36.88	54.00	AWWA	28.00	26.00	
	North Meadows	N-P3-D	P 3 Discharge Valve	36	Chapman	36 58 1/2	Double Disc	Chapman Electrics/ handwheel	O/S/C on engine floor, O/S/C at valve	M	A	Stem Leaks	32	Lead/Flange	17.25	23.75	41.00	AWWA	28.00	13.00	
	North Meadows	N-P4-S	P 4 Suction Valve	36	Chapman	36 58 1/2	Double Disc	Handwheel	Manual only	?	N/A	Staff never exercise suction valves	32	Lead/Flange	17.13	37.13	54.25	AWWA	28.00	26.25	
	North Meadows	N-P4-D	P 4 Discharge Valve	36	Chapman	36 58 1/2	Double Disc	Chapman Electrics/ handwheel	O/S/C on engine floor, O/S/C at valve	M	A		32	Lead/Flange	17.25	21.625	38.88	AWWA	28.00	10.88	
	North Meadows	N-P5-S	P 5 Suction Valve	16	Chapman	16 58 1/2,7-C-28,50WSP	Double Disc	Handwheel	Manual only	A	N/A	Staff never exercise suction valves	16	Lead/Flange	13.50	107.25	120.75	AWWA	16.00	104.75	
	North Meadows	N-P5-D	P 5 Discharge Valve	16	Chapman	16 58 1/2,4-4-G,50WSP	Double Disc	Handwheel	Manual only	U	N/A	Reportedly Frozen - Cannot open or close	16	Flange/Flange	12.50	92	104.50	AWWA	16.00	88.50	
	Keney Lane	K-P1-S	P 1 Suction Valve	36	Chapman	36 35X	Wedge	Rotork electric conversion from hydraulic	O/S/C at panel, O/S/C + handwheel at valve	A	A	New operators; difficult to reach	32	Flange/Flange	24.00	98.13	122.13	AWWA	28.00	94.13	
	Keney Lane	K-P1-D	P 1 Discharge Valve	36	Chapman	36 35X	Wedge	Rotork electric conversion from hydraulic	O/S/C at panel, O/S/C + handwheel at valve	A	A	New operators; difficult to reach	32	Lead/Flange	22.00	0	22.00	AWWA	7.00	11.50	
	Keney Lane	K-P2-S	P 2 Suction Valve	36	Chapman	36 35X	Wedge	Rotork electric conversion from hydraulic	O/S/C at panel, O/S/C + handwheel at valve	A	A	New operators; difficult to reach	32	Flange/Flange	24.00	112.5	136.50	AWWA	28.00	108.50	
	Keney Lane	K-P2-D	P 2 Discharge Valve	36	Chapman	36 35X	Wedge	Rotork electric conversion from hydraulic	O/S/C at panel, O/S/C + handwheel at valve	A	A	New operators; difficult to reach	32	Lead/Flange	22.00	0	22.00	AWWA	7.00	11.5	
	Keney Lane	K-P3-S	P 3 Suction Valve	36	Chapman	36 35X	Wedge	Rotork electric conversion from hydraulic	O/S/C at panel, O/S/C + handwheel at valve	A	A	New operators; difficult to reach	32	Flange/Flange	24.00	112	136.00	AWWA	28.00	108.00	
	Keney Lane	K-P3-D	P 3 Discharge Valve	36	Chapman	36 35X	Wedge	Rotork electric conversion from hydraulic	O/S/C at panel, O/S/C + handwheel at valve	A	A	New operators; difficult to reach	32	Lead/Flange	22.00	0	22.00	AWWA	7.00	11.50	
	Keney Lane	K-P4-S	P 4 Suction Valve	16	Chapman	16,L,35,MS,50WP,150,TEST	Wedge	Handwheel	Manual only	A	N/A		16	Flange/Flange	11.75	144	155.75	AWWA	16.00	139.75	
	Keney Lane	K-P4-D	P 4 Discharge Valve	16	Chapman	16,L,35,MS,50WP,150,TEST	Wedge	Handwheel floorstand engine level	Manual only	A	N/A		16	Flange/Flange	11.75	18	29.75	AWWA	16.00	13.75	
	Bushnell Park	B-P1-S	P 1 Suction Valve	30	Chapman	30L35X	Wedge	Rotork electric conversion from hydraulic	O/S/C at panel, O/S/C + handwheel at valve	A	A	New operators; difficult to reach	28	Flange/Flange	21.25	78	99.25	AWWA	24.00	75.25	
	Bushnell Park	B-P1-D	P 1 Discharge Valve	30	Chapman	30L35X	Wedge	Rotork electric conversion from hydraulic	O/S/C at panel, O/S/C + handwheel at valve	A	A	New operators; difficult to reach	28	Flange/Flange	21.25	64	85.25	AWWA	24.00	61.25	
	Bushnell Park	B-P2-S	P 2 Suction Valve	30	Chapman	30L35X	Wedge	Rotork electric conversion from hydraulic	O/S/C at panel, O/S/C + handwheel at valve	A	A	New operators; difficult to reach	28	Flange/Flange	21.00	79	100.00	AWWA	24.00	76.00	
	Bushnell Park	B-P2-D	P 2 Discharge Valve	30	Chapman	30L35X	Wedge	Rotork electric conversion from hydraulic	O/S/C at panel, O/S/C + handwheel at valve	A	A	New operators; difficult to reach	28	Flange/Flange	21.00	64.5	85.50	AWWA	24.00	61.50	
	Bushnell Park	B-P3-S	P 3 Suction Valve	30	Chapman	30L35X	Wedge	Rotork electric conversion from hydraulic	O/S/C at panel, O/S/C + handwheel at valve	A	A	New operators; difficult to reach	28	Flange/Flange	21.00	79	100.00	AWWA	24.00	76.00	
	Bushnell Park	B-P3-D	P 3 Discharge Valve	30	Chapman	30L35X	Wedge	Rotork electric conversion from hydraulic	O/S/C at panel, O/S/C + handwheel at valve	A	A	New operators; difficult to reach	28	Flange/Flange	21.00	64	85.00	AWWA	24.00	61.00	
	Bushnell Park	B-P4-S	P 4 Suction Valve	16	Chapman	16,L,35,MS,50WP,150,TEST	Wedge	Handwheel	Manual only	A	N/A		16	Flange/Flange	11.75	147	158.75	AWWA	16.00	142.75	
	Bushnell Park	B-P4-D	P 4 Discharge Valve	16	Chapman	16,L,35,MS,50WP,150,TEST	Wedge	Handwheel floorstand engine level	Manual only	A	N/A		16	Flange/Flange	11.75	32	43.75	AWWA	16.00	27.75	
	Armory	A-P1-S	P 1 Suction Valve	24	Dresser	24, 78, 150W	Wedge/Disc	Electrodyne electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	?	M	Electric/control problem, would not Operate	N/A	Flange/Flange	24.25	73.5	97.75	AWWA	20	77.75	
	Armory	A-P1-D	P 1 Discharge Valve	24	Dresser	24, 78, 150W	Wedge/Disc	Electrodyne electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	A	A	N/A	N/A	Flange/Flange	24.25	70.5	94.75	AWWA	20	74.75	
	Armory	A-P2-S	P 2 Suction Valve	24	Dresser	24, 78, 150W	Wedge/Disc	Electrodyne electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	A	A	N/A	N/A	Flange/Flange	24.25	72.5	96.75	AWWA	20	76.75	
	Armory	A-P2-D	P 2 Discharge Valve	24	Dresser	24, 78, 150W	Wedge/Disc	Electrodyne electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	?	M	Electric/control problem, only move 1/2 way	N/A	Flange/Flange	24.25	70.5	94.75	AWWA	20	74.75	
	Armory	A-P3-S	P 3 Suction Valve	24	Dresser	24, 78, 150W	Wedge/Disc	Electrodyne electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	A	A	N/A	N/A	Flange/Flange	24.25	74.25	98.50	AWWA	20	78.50	
	Armory	A-P3-D	P 3 Discharge Valve	24	Dresser	24, 78, 150W	Wedge/Disc	Electrodyne electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	A	A	N/A	N/A	Flange/Flange	24.25	70.25	94.50	AWWA	20	74.50	
	Pope Park	P-P1-S	P 1 Suction Valve	20	Dresser	20, 77, 150 W	Wedge/Disc	Electrodyne electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	A	A	N/A	N/A	Flange/Flange	20.38	64.25	84.63	AWWA	18	66.63	
	Pope Park	P-P1-D	P 1 Discharge Valve	20	Dresser	20, 77, 150 W	Wedge/Disc	Electrodyne electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	A	A	N/A	N/A	Flange/Flange	20.25	36.5	56.75	AWWA	18	38.75	
	Pope Park	P-P2-S	P 2 Suction Valve	20	Dresser	20, 77, 150 W	Wedge/Disc	Electrodyne electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	A	A	N/A	N/A	Flange/Flange	20.25	64.38	84.63	AWWA	18	66.63	
	Pope Park	P-P2-D	P 2 Discharge Valve	20	Dresser	20, 77, 150 W	Wedge/Disc	Electrodyne electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	?	M	Electric/control problem, would not operate	N/A	Flange/Flange	20.25	36.5	56.75	AWWA	18	38.75	
	Pope Park	P-P3-S	P 3 Suction Valve	20	Dresser	20, 77, 150 W	Wedge/Disc	Electrodyne electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	?	M	Electric/control problem, would not operate	N/A	Flange/Flange	20.38	63.88	84.26	AWWA	18	66.26	
	Pope Park	P-P3-D	P 3 Discharge Valve	20	Dresser	20, 77, 150 W	Wedge/Disc	Electrodyne electric w/ handwheel	O/S/C at panel, O/S/C + handwheel at valve	A	A	N/A	N/A	Flange/Flange	20.25	36.88	57.13	AWWA	18	39.13	

General Notes			
	All Dimensions are in inches unless otherwise noted		
	Definitions:		
	ANSI - American National Standards Institute. Denotes a valve conforming to API Spec 600 or MSS SP-70		
	O/S/C - "Open / Stop Close" pushbutton control		
	AWWA - American Water Works Association. Denotes a rotating disc gate valve conforming to AWWA C-500.		

Note 1:	
	See drawings DP-101 though DP-108 for location specific piping schematic. See drawings SM-301 through AP-302 for location specific Site Plan and Elevation drawings
Note 2: Existing Valve Condition and/or Existing Valve Actuator Condition	
A	Gates open and close freely with minor leakage. Sill is free of sediment and other obstructions. Gates and lifters have been maintained.
M	Gates have been damaged or have deteriorated and open and close with resistance or binding. Leakage quantity is controllable and is not a threat to project performance. Maintenance is required.
U	Gates do not open or close. Gate, stem, lifter and/or guides may be damaged or corroded.
?	Gate not inspected / operated due to Flood Control Staff concerns to keep station operational.
Note 3: Calculation of Maximum Allowable Valve Length	
	Sum of Valve Face to Face dimension and Adjacent Spool Length
Note 4: Calculation of New Replacement Spool Length	
	Sum of Existing Valve Face to Face dimension and Adjacent Spool Length minus New Replacement Valve Length
Note 5: Special Replacement Requirements for Keney Lane Pumping Station Discharge Valves K-P1-D, K-P2-D and K-P3-D.	
#1	Replace FLXLeaded Gate Valves with FLXFL Knife Valves due to Tight Space
#2	Replace FLXLeaded Check Valves with FLXFL Check Valves

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: NTS
VERT.: NTS
DATUM:
HORZ.:
VERT.:

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

CITY OF HARTFORD

VALVE LIST

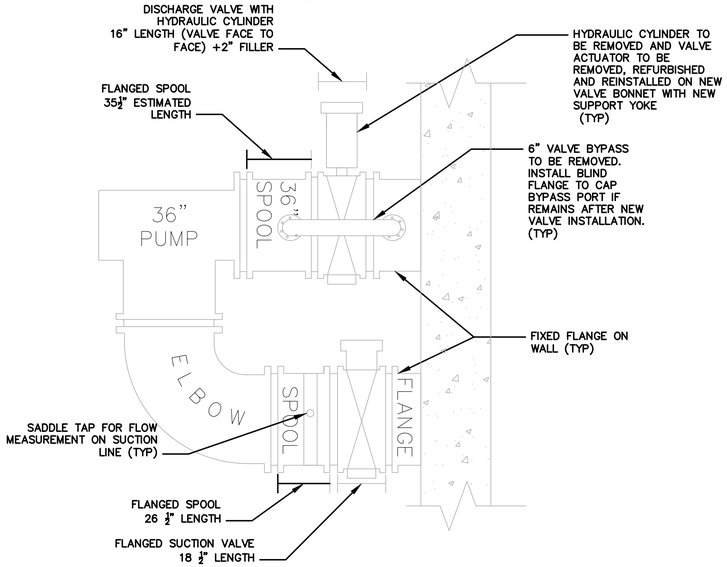
HIGHEST PRIORITY PUMPING STATION IMPROVEMENTS
CONTRACT# DPW14-43

HARTFORD CONNECTICUT

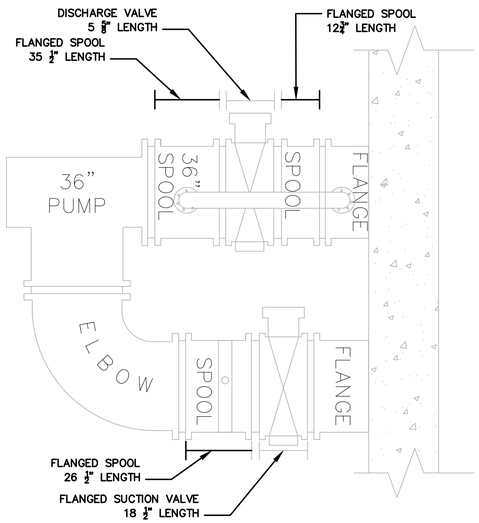
PROJ. No.: 01997279.F75
DATE: JULY 2014

GI-602

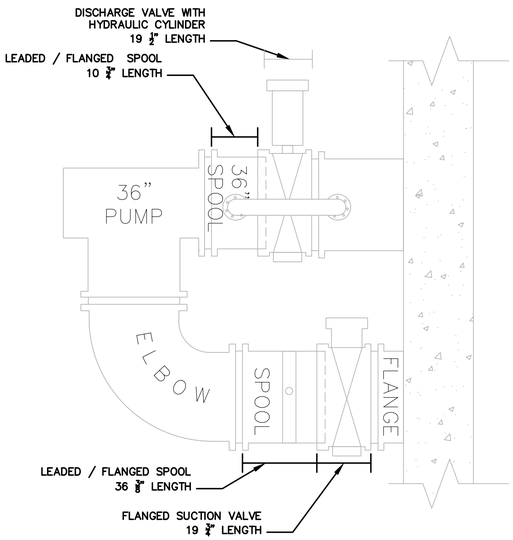
S–P1



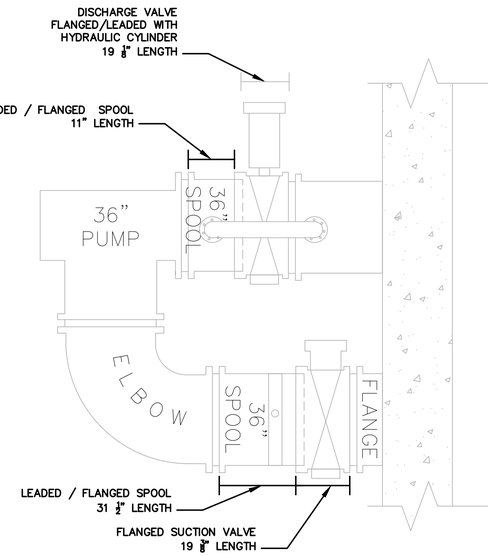
S–P2



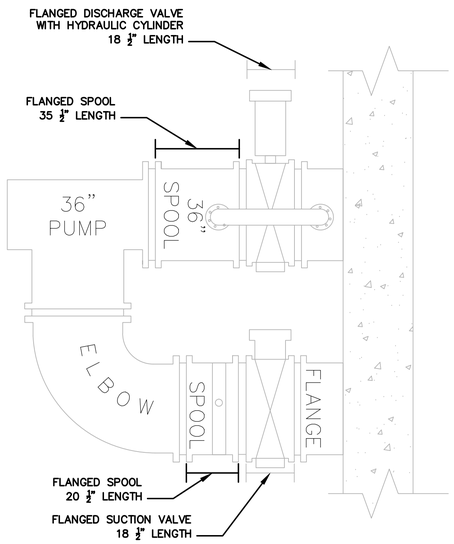
S–P3



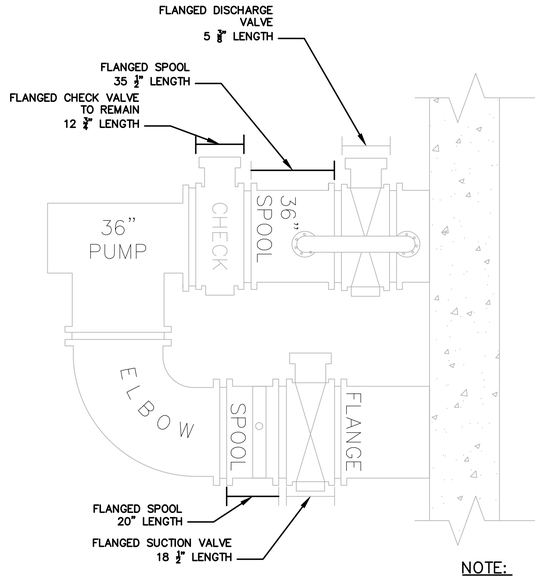
S–P4



S–P5



S–P6



NOTE:

1. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY DIMENSIONS IN THE FIELD PRIOR TO SUBMITTING SHOP DRAWINGS.
2. CONTRACTOR SHALL VERIFY FLANGE FACE TYPES IN THE FIELD.
3. 6" DISCHARGE VALVE BYPASS PIPING AND VALVE ON DISCHARGE SIDE SHALL BE REMOVED. THE REMAINING BYPASS PORTS SHALL BE CAPPED WITH A BLIND FLANGE.
4. PROVIDE SADDLE TAPS FOR FLOW MEASUREMENT ON SUCTION LINES AFTER SUCTION VALVES.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: NTS
VERT.: NTS
DATUM:
HORZ.:
VERT.:

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

CITY OF HARTFORD

EXISTING PIPE CONFIGURATIONS
SOUTH MEADOWS

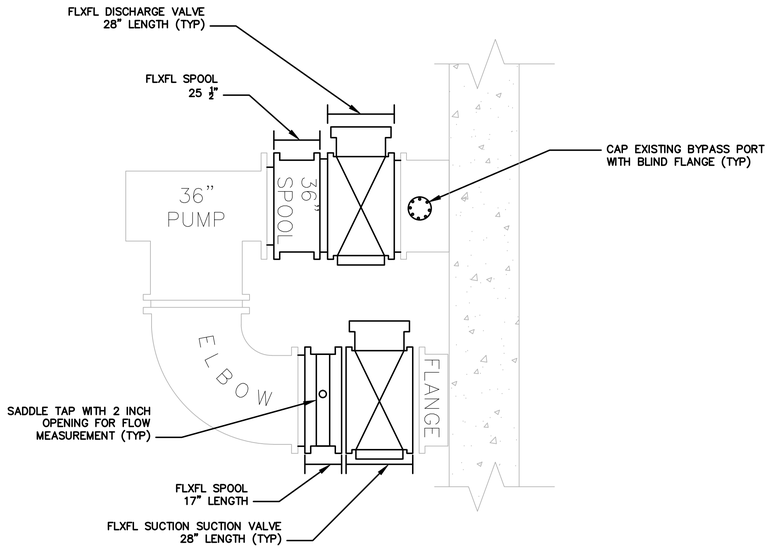
HIGHEST PRIORITY PUMPING STATION IMPROVEMENTS
CONTRACT# DPW14-43

HARTFORD CONNECTICUT

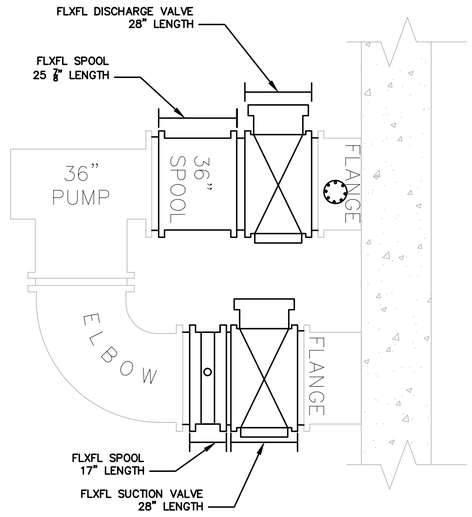
PROJ. No.: 01997279.F75
DATE: JULY 2014

DP-101

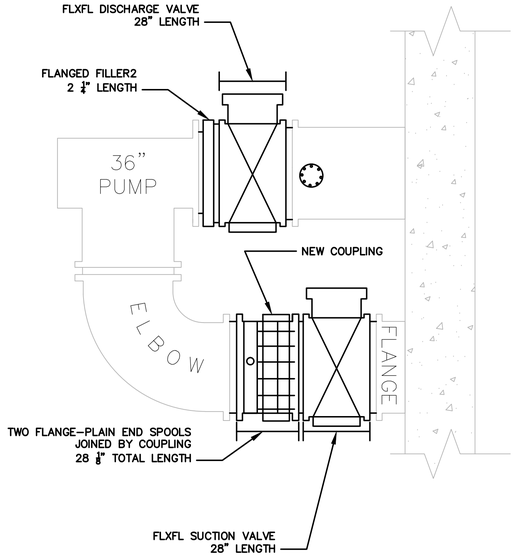
S–P1



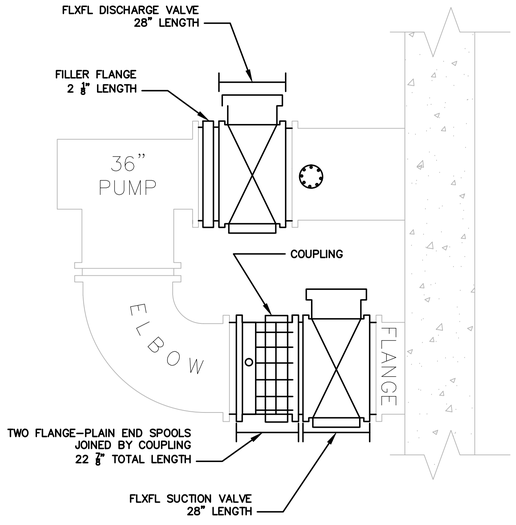
S–P2



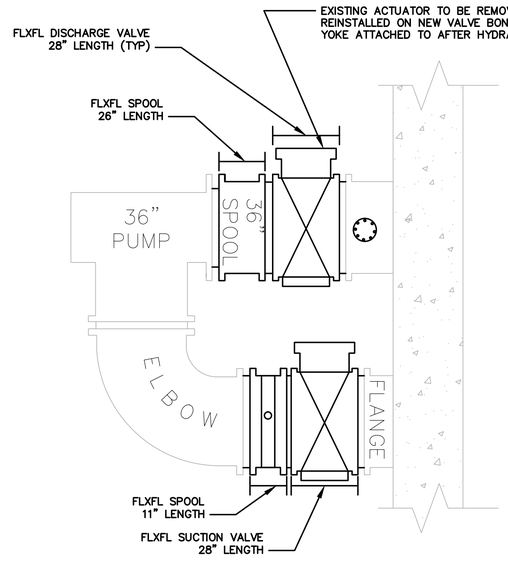
S–P3



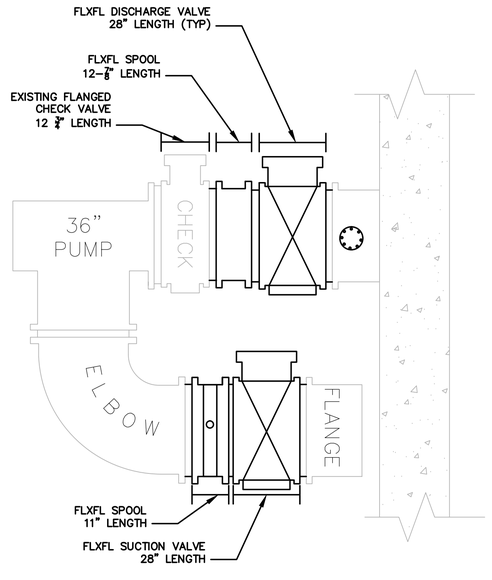
S–P4



S–P5



S–P6



NOTE:

1. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY DIMENSIONS IN THE FIELD AND BASED ON SELECTED PRODUCTS PRIOR TO SUBMITTING SHOP DRAWINGS.
2. DISCHARGE VALVE BYPASS PIPING ON DISCHARGE SIDE SHALL BE REMOVED. IF REMAINS AFTER THE INSTALLATION OF NEW VALVE, THE BYPASS PORT SHALL BE CAPPED WITH BLIND FLANGE.
3. PROVIDE SADDLE TAPS WITH 2 INCH OPENING FOR FLOW MEASUREMENT ON SUCTION LINES AFTER SUCTION VALVES. SEE DETAILS ON DP–109.
4. EXISTING ACTUATORS OF DISCHARGE VALVES P–S1–D, P–S3–D, P–S4–D, P–S5–D IN SOUTH MEADOWS PUMPING STATION ARE INSTALLED ON PREVIOUS HYDRAULIC CYLINDERS. HYDRAULIC CYLINDER SHALL BE REMOVED, AND ACTUATOR SHALL BE REMOVED, REFURBISHED AND RE–INSTALLED ON NEW VALVE BONNET WITH NEW SUPPORT YOKE.
5. EXISTING ACTUATORS OF DISCHARGE VALVES P–S2–D AND P–S6–D (BOTH ARE KNIFE VALVES) SHALL BE REPLACED WITH NEW ROTORK ELECTRIC OPERATORS (ACTUATORS) .INSTALL NEW ACTUATORS ON NEW DISCHARGE GATE VALVE BONNETS WITH NEW SUPPORT YOKES.
6. EXISTING ACTUATORS OF ALL SUCTION VALVES SHALL BE REMOVED, REFURBISHED AND RE–INSTALLED ON NEW SUCTION VALVES. NEW SUCTION VALVES MAY NEED TO BE INSTALLED AT AN ANGLE FROM VERTICAL. PROPER VALVES SHALL BE INSTALLED TO ENSURE THAT THEY CAN BE INSTALLED TILTED.
7. PROVIDE SADDLE TAPS WITH 2" OPENING FOR FLOW MEASUREMENT ON SUCTION LINES AFTER SUCTION VALVES. SEE DETAILS ON DP–113.
8. CONTRACTOR SHALL PROVIDE ADEQUATE PIPE/VALVE SUPPORT AS NEEDED. REFERRING TO DRAWING DP–114, SUPPORT SHALL BE TYPE A, B FOR PUMPS 1,2,5 AND 6, AND TYPE C FOR PUMPS 3 AND 4.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: NTS
VERT.: NTS
DATUM:
HORZ.:
VERT.:

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

CITY OF HARTFORD

PROPOSED PIPE CONFIGURATIONS
SOUTH MEADOWS

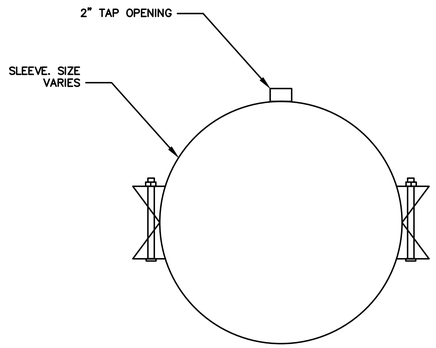
HIGHEST PRIORITY PUMPING STATION IMPROVEMENTS
CONTRACT# DPW14-43

HARTFORD CONNECTICUT

PROJ. No.: 01997279.F75
DATE: JULY 2014

DP-102

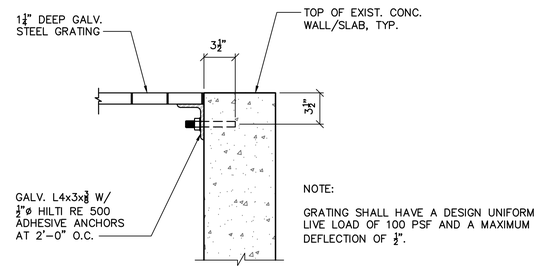
File Path: C:\Temp\AcPublish_21920\1997027975 - V&P.dwg, Layout: DP-102 South Meadows-Proposed, Plotted: Tue, Jun 24, 2014 - 9:54 AM User: ztang
Plotter: DWG TO PDF.PC3 CTB File: FO 2008 MONO COVER.CTB
MS VIEW:
LAYER STATE:



SADDLE TAP DETAILS

NOTE:
1. PROVIDE SADDLE TAP (TAPPING SLEEVE) FOR FLOW MEASUREMENT. SADDLE TAP SHALL MEET THE REQUIREMENTS BELOW:

1.1. BODY SHALL BE THE HIGH STRENGTH TYPE FABRICATED OF A MINIMUM OF ASTM 283 GRADE C STEEL.
1.2. SLEEVE SHALL BE MINIMUM 8" WIDE AND BE SIZED TO FIT AND REINFORCE THE PIPE CIRCUMFERENCE.
1.3. SLEEVE OUTLET SHALL HAVE A MINIMUM 3/4" WIDE BUNA-N GASKET RECESSED IN A MACHINED GROOVE AROUND THE THREADED OUTLET.
1.4. SERVICE FITTING SHALL BE FURNISHED WITH A CORROSION RESISTANT SHOP COAT PAINT PRIMER WITH HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT BOLTS AND NUTS A242/ANSI 21.11/AWWA C111.
1.5. CONTRACTOR SHALL VERIFY PIPE OD AND COORDINATE WITH SADDLE TAP.
1.6. SERVICE FITTINGS SHALL BE JCM 418 THREADED OUTLET TAPPING SLEEVE OR APPROVED EQUAL.



GRATING DETAIL

GRATING DETAIL

File Path: C:\Temp\AcPublish_2192\1997027975 - V&P.dwg, Layout: DP-113 DETAILS, Plotted: Tue, Jun 24, 2014 - 9:55 AM User: ztang
MS VIEW: LAYER STATE: Plotter: DWG TO PDF.PC3 CTB File: FO 2008 MONO COVER.CTB

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: NTS
VERT.: NTS
DATUM:
HORZ.:
VERT.:

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

CITY OF HARTFORD

DETAILS -SADDLE TAP & GRATING

HIGHEST PRIORITY PUMPING STATION IMPROVEMENTS
CONTRACT# DPW14-43

HARTFORD CONNECTICUT

PROJ. No.: 01997279.F75
DATE: JULY 2014

DP-113

CONCRETE NOTES:

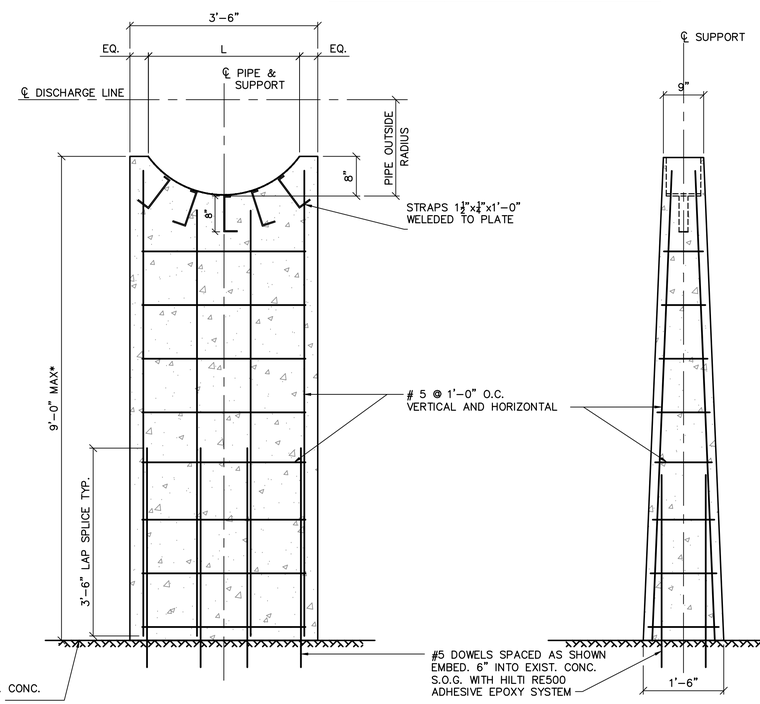
1. ALL CONCRETE WORK SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
2. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 AND BE DETAILED IN ACCORDANCE WITH ACI 315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".
3. REBARS SHALL HAVE A MINIMUM CONCRETE COVER AS FOLLOWS:
   CONCRETE DEPOSITED AGAINST GROUND.....3 IN.
   CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
   FOR BARS #5 AND LARGER.....2 IN.
   FOR BARS SMALLER THAN #5.....1½ IN.
   CONCRETE NOT EXPOSED TO THE WEATHER OR THE GROUND:
   SLABS AND WALLS.....¾ IN.
4. ALL REINFORCING BARS SHALL BE CONTINUOUS AND LAPPED A MINIMUM OF 48 BAR DIAMETERS AT ALL SPLICES, CORNERS, AND INTERSECTIONS UNLESS NOTED OTHERWISE.
5. ALL REINFORCEMENT SHALL BE SECURELY TIED IN ITS PROPOSED LOCATION PRIOR TO AND DURING PLACEMENT OF CONCRETE USING APPROVED CHAIRS, SPACERS AND TIE WIRE AS REQUIRED. NO BARS SHALL BE CUT OR OMITTED IN THE FIELD WITHOUT THE APPROVAL OF THE ENGINEER.
6. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185, WITH A MINIMUM YIELD STRENGTH OF 75 KSI. LAP EDGES AND ENDS OF FABRIC SHEETS A MINIMUM OF ONE MESH SPACING PLUS 2 INCHES, AND WIRE TOGETHER. ALTERNATIVELY, SLABS–ON–GRADE MAY BE REINFORCED WITH FIBER REINFORCEMENT, SUCH AS FIBERMESH, APPLIED AT A DOSAGE RATE OF NO LESS THAN 1.5 LBS/CU YD.
7. CONCRETE PROTECTION FOR REINFORCEMENT SHALL IN ALL CASES BE AT LEAST EQUAL TO THE DIAMETER OF THE BAR EXCEPT FOR CONCRETE SLABS.
8. CONCRETE SHALL BE NORMAL WEIGHT CONCRETE AND SHALL DEVELOP A COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS. CONCRETE SHALL HAVE A MAXIMUM AGGREGATE SIZE OF ¾ INCH, A MINIMUM CEMENT CONTENT OF 560 LBS/CU YD., AND A MAXIMUM SLUMP OF 4 INCHES.
9. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE A ¾ INCH CHAMFER UNLESS NOTED OTHERWISE.
10. ALL CONCRETE EXPOSED TO THE WEATHER SHALL BE AIR–ENTRAINED.
11. SIZES AND LOCATIONS OF ALL REQUIRED EMBEDDED ITEMS FOR ALL TRADES SUCH AS ANCHOR BOLTS, PIPING SLEEVES, HOLDOWN ANCHORS, ETC., SHALL BE COORDINATED BY THE CONTRACTOR WITH OTHER TRADES.

STRUCTURAL STEEL NOTES:

1. ALL STRUCTURAL STEEL SHALL BE NEW, CLEAN, AND STRAIGHT AND SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE A.I.S.C. CODE OF STANDARD PRACTICE (ADOPTED MARCH 18, 2005), EXCEPT AS MODIFIED IN THESE NOTES AND THE PROJECT SPECIFICATIONS.
2. STRUCTURAL STEEL FABRICATION AND ERECTION SHALL COMPLY WITH THE BUILDING CODE, THE SPECIFICATION, AND THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (ADOPTED JUNE 21, 2005)" OF AISC.
3. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY. D1.1–92 STRUCTURAL WELDING CODE–STEEL.
4. ALL FILLET WELDING SHALL BE A MINIMUM OF 3/16 INCH WELD UNLESS NOTED OTHERWISE ON DRAWINGS. SEE THE SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
5. ALL FIELD CONNECTIONS SHALL BE BOLTED EXCEPT WHERE WELDING IS SPECIFIED ON THE PLANS. BOLTS SHALL BE ¾ INCH DIAMETER MINIMUM. BOLT HOLES FOR STEEL ANCHORED TO CONCRETE, UTILIZING CAST–IN–PLACE ANCHORS, SHALL BE BOLT DIAMETER PLUS 3/16 INCH. CONNECTIONS NOT SPECIFICALLY DETAILED ON THE PLANS SHALL BE DESIGNED FOR THE LOADS INDICATED ON THE DRAWINGS OR THOSE STATED IN THE AISC UNIFORM LOAD TABLES, WHICHEVER IS GREATER.
6. PROVIDE HOLES, COPES, ETC. REQUIRED IN STRUCTURAL STEEL MEMBERS FOR WORK OF OTHER TRADES. THEY SHALL BE SHOWN ON STRUCTURAL SHOP DRAWINGS AND SHALL BE MADE IN THE SHOP. FIELD BURNING OF HOLES OR CUTS IN STRUCTURAL STEEL MEMBERS WILL NOT BE PERMITTED EXCEPT WITH THE SPECIFIC WRITTEN APPROVAL OF THE ENGINEER.
7. ALL STRUCTURAL STEEL SHALL BE HOT–DIPPED GALVANIZED.

* CONTRACTOR TO VERIFY ELEVATION OF PIPES IN FIELD PRIOR TO CONSTRUCTION OF NEW PIPE SUPPORTS.

PIPE SUPPORT 1		
Nominal Pipe Diameter (in)	Outside Pipe Diameter (in)	Chord Length, L (in)
16	17.40	17 1/4
20	21.60	20 3/4
24	25.80	23 3/4
30	32.00	27 3/4
36	38.30	31 1/4

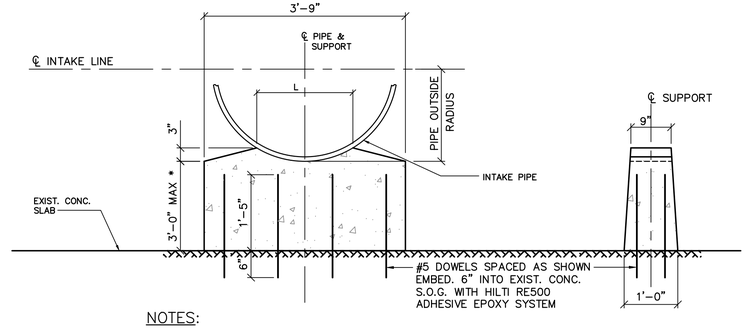


NOTES:

1. TYPE 'A' IS FOR PUMP 1,2,5,6 DISCHARGE SIDES.

A TYPE 'A' CONCRETE PIPE SUPPORT
SCALE: 3/4" = 1'–0"

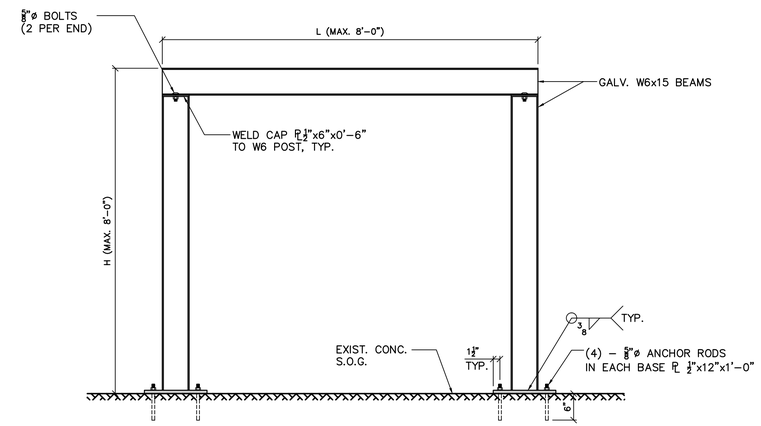
PIPE SUPPORT 2		
Nominal Pipe Diameter (in)	Outside Pipe Diameter (in)	Chord Length, L (in)
16	17.40	13 1/4
20	21.60	15
24	25.80	16 1/2
30	32.00	18 3/4
36	38.30	20 1/2



NOTES:

1. TYPE 'B' IS FOR PUMP 1,2,3,4,5,6 SUCTION SIDES.

B TYPE 'B' CONCRETE PIPE SUPPORT
SCALE: 3/4" = 1'–0"



NOTE:

1. TYPE 'C' IS FOR PUMP 3 AND 4 DISCHARGE SIDES.
2. FINAL DIMENSIONS, "H" AND "L" TO BE DETERMINED AFTER CONTRACTOR HAS FIELD VERIFIED LOCATION OF NEW PIPE SUPPORT. ALL STEEL SHALL BE HOT–DIPPED GALVANIZED.

C TYPE 'C' STEEL PIPE SUPPORT
SCALE: 3/4" = 1'–0"

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: NTS
VERT.: NTS
DATUM:
HORZ.:
VERT.:

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

CITY OF HARTFORD

PIPE SUPPORT

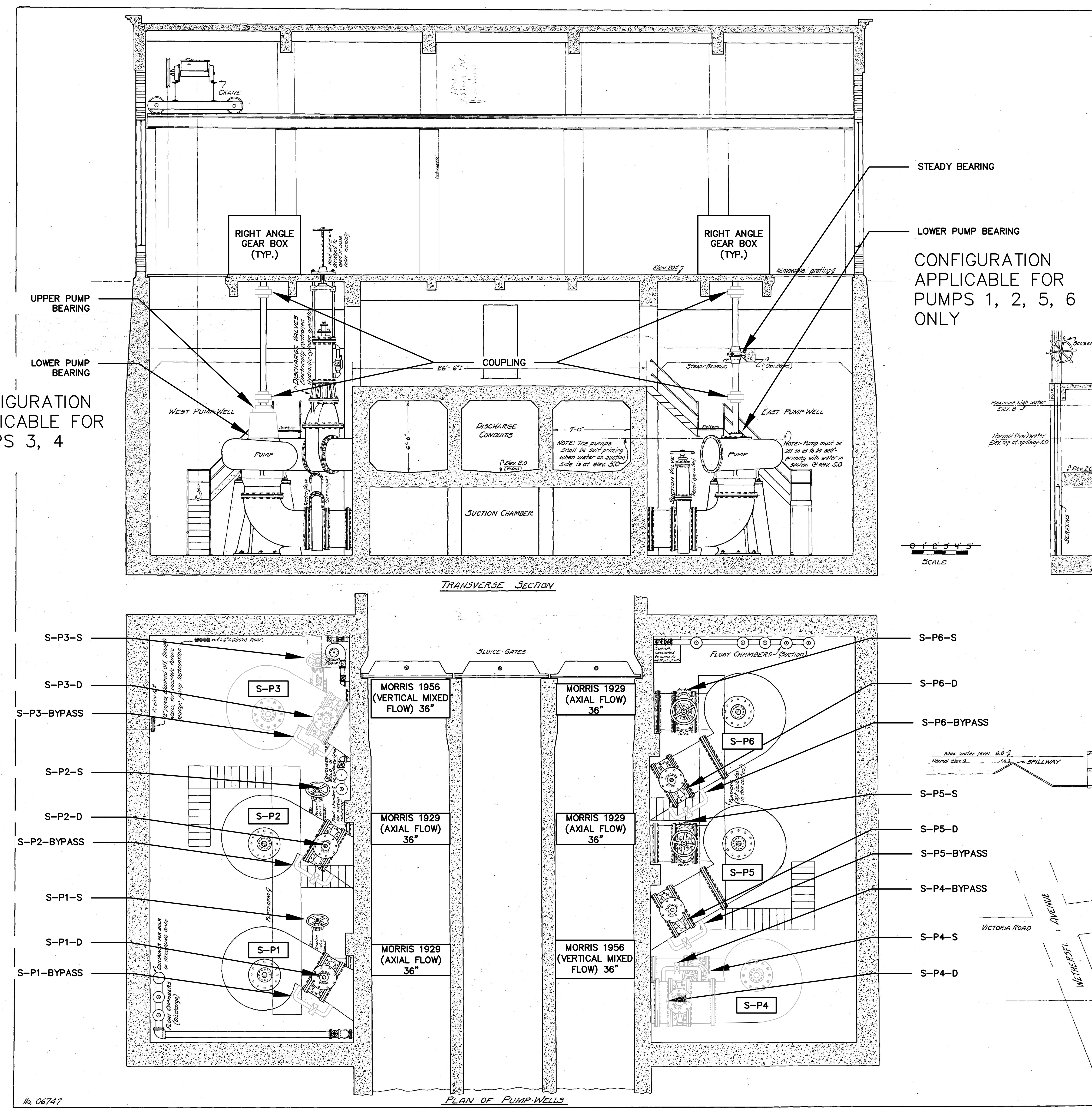
HIGHEST PRIORITY PUMPING STATION IMPROVEMENTS
CONTRACT# DPW14-43

HARTFORD CONNECTICUT

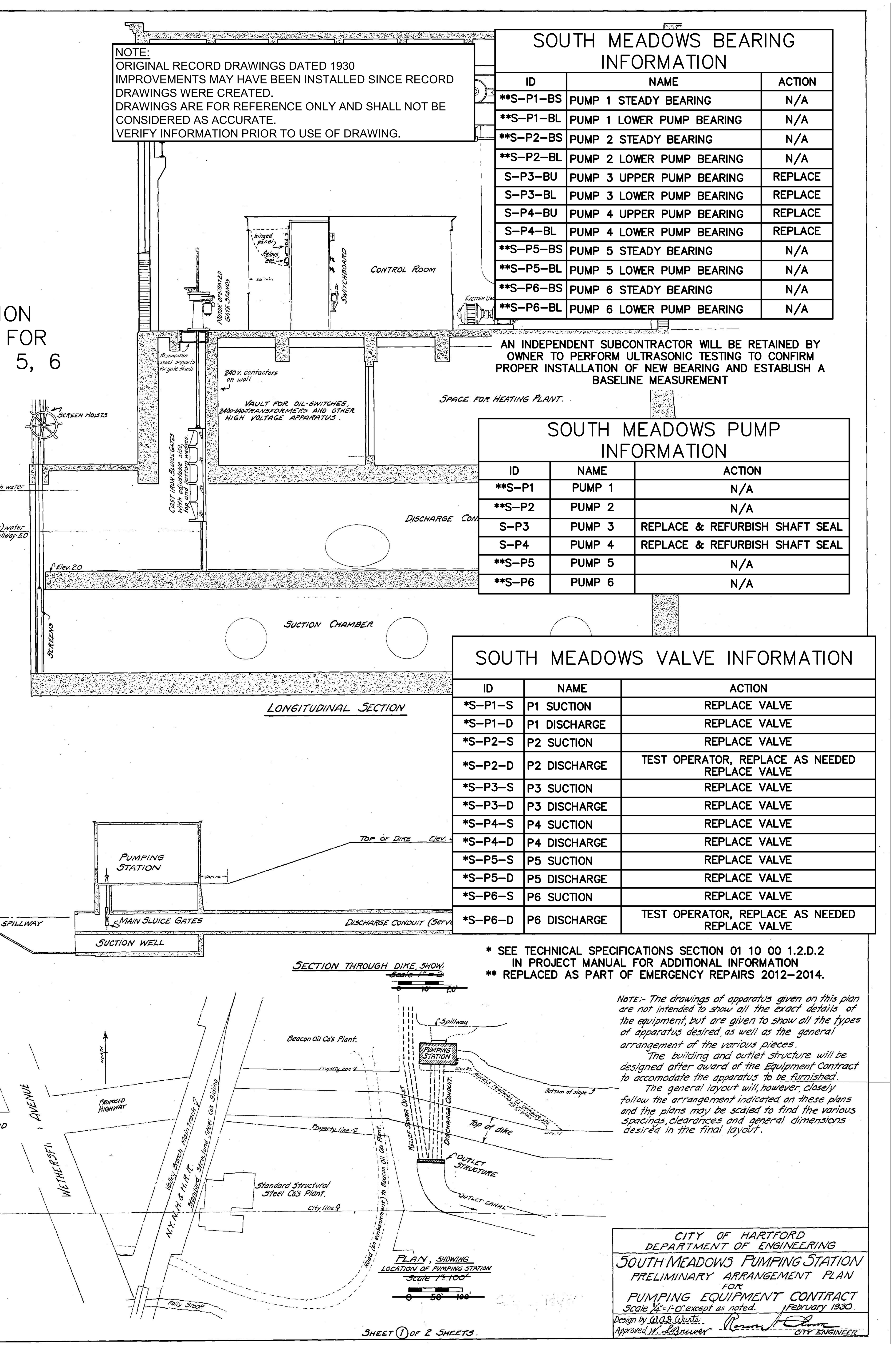
PROJ. No.: 01997279.F75
DATE: JULY 2014

DP-114

File Path: J:\DWG\P97\97279\F75\Valve and Pump List\199702279.F75_PipeSupport.dwg, Layout: DP-114 Pipe Support, Plotted: Tue, Jun 24, 2014 - 9:55 AM User: ztang
MS VIEW: LAYER STATE:
Plotter: DWG TO PDF.PC3 CTB File: FO 2008 MONO COVER.CTB



NOTE:
ORIGINAL RECORD DRAWINGS DATED 1930
IMPROVEMENTS MAY HAVE BEEN INSTALLED SINCE RECORD DRAWINGS WERE CREATED.
DRAWINGS ARE FOR REFERENCE ONLY AND SHALL NOT BE CONSIDERED AS ACCURATE.
VERIFY INFORMATION PRIOR TO USE OF DRAWING.



SOUTH MEADOWS BEARING INFORMATION

ID	NAME	ACTION
**S-P1-BS	PUMP 1 STEADY BEARING	N/A
**S-P1-BL	PUMP 1 LOWER PUMP BEARING	N/A
**S-P2-BS	PUMP 2 STEADY BEARING	N/A
**S-P2-BL	PUMP 2 LOWER PUMP BEARING	N/A
S-P3-BU	PUMP 3 UPPER PUMP BEARING	REPLACE
S-P3-BL	PUMP 3 LOWER PUMP BEARING	REPLACE
S-P4-BU	PUMP 4 UPPER PUMP BEARING	REPLACE
S-P4-BL	PUMP 4 LOWER PUMP BEARING	REPLACE
**S-P5-BS	PUMP 5 STEADY BEARING	N/A
**S-P5-BL	PUMP 5 LOWER PUMP BEARING	N/A
**S-P6-BS	PUMP 6 STEADY BEARING	N/A
**S-P6-BL	PUMP 6 LOWER PUMP BEARING	N/A

AN INDEPENDENT SUBCONTRACTOR WILL BE RETAINED BY OWNER TO PERFORM ULTRASONIC TESTING TO CONFIRM PROPER INSTALLATION OF NEW BEARING AND ESTABLISH A BASELINE MEASUREMENT

SOUTH MEADOWS PUMP INFORMATION

ID	NAME	ACTION
**S-P1	PUMP 1	N/A
**S-P2	PUMP 2	N/A
S-P3	PUMP 3	REPLACE & REFURBISH SHAFT SEAL
S-P4	PUMP 4	REPLACE & REFURBISH SHAFT SEAL
**S-P5	PUMP 5	N/A
**S-P6	PUMP 6	N/A

SOUTH MEADOWS VALVE INFORMATION

ID	NAME	ACTION
*S-P1-S	P1 SUCTION	REPLACE VALVE
*S-P1-D	P1 DISCHARGE	REPLACE VALVE
*S-P2-S	P2 SUCTION	REPLACE VALVE
*S-P2-D	P2 DISCHARGE	TEST OPERATOR, REPLACE AS NEEDED REPLACE VALVE
*S-P3-S	P3 SUCTION	REPLACE VALVE
*S-P3-D	P3 DISCHARGE	REPLACE VALVE
*S-P4-S	P4 SUCTION	REPLACE VALVE
*S-P4-D	P4 DISCHARGE	REPLACE VALVE
*S-P5-S	P5 SUCTION	REPLACE VALVE
*S-P5-D	P5 DISCHARGE	REPLACE VALVE
*S-P6-S	P6 SUCTION	REPLACE VALVE
*S-P6-D	P6 DISCHARGE	TEST OPERATOR, REPLACE AS NEEDED REPLACE VALVE

* SEE TECHNICAL SPECIFICATIONS SECTION 01 10 00 1.2.D.2 IN PROJECT MANUAL FOR ADDITIONAL INFORMATION
** REPLACED AS PART OF EMERGENCY REPAIRS 2012–2014.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

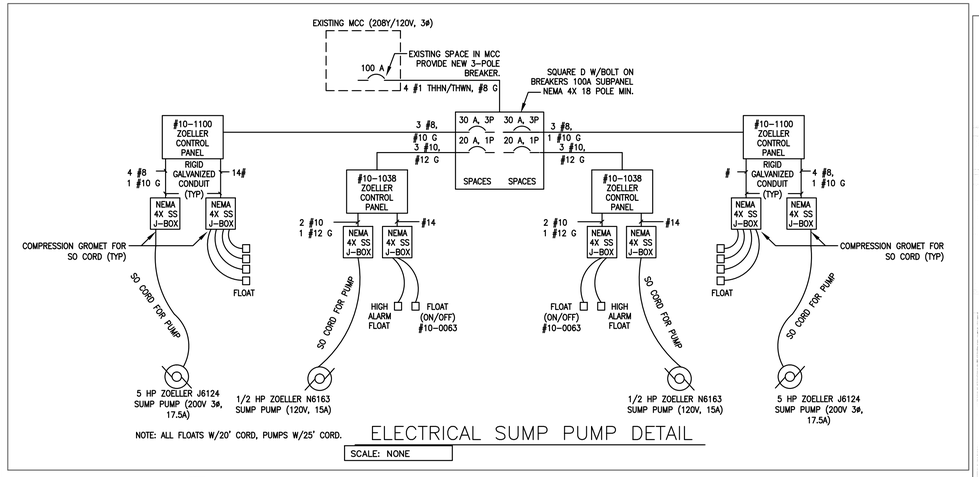
SCALE:
HORZ.: NTS
VERT.: NTS
DATUM:
HORZ.:
VERT.:
0
GRAPHIC SCALE

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

CITY OF HARTFORD
SOUTH MEADOWS PUMPING STATION
IDENTIFICATION OF NECESSARY REPAIRS
HIGHEST PRIORITY PUMPING STATION IMPROVEMENTS
CONTRACT# DPW14-43
HARTFORD CONNECTICUT

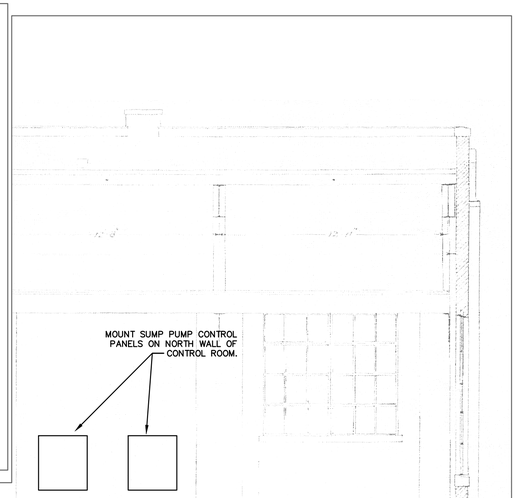
PROJ. No.: 01997279.F75
DATE: JULY 2014

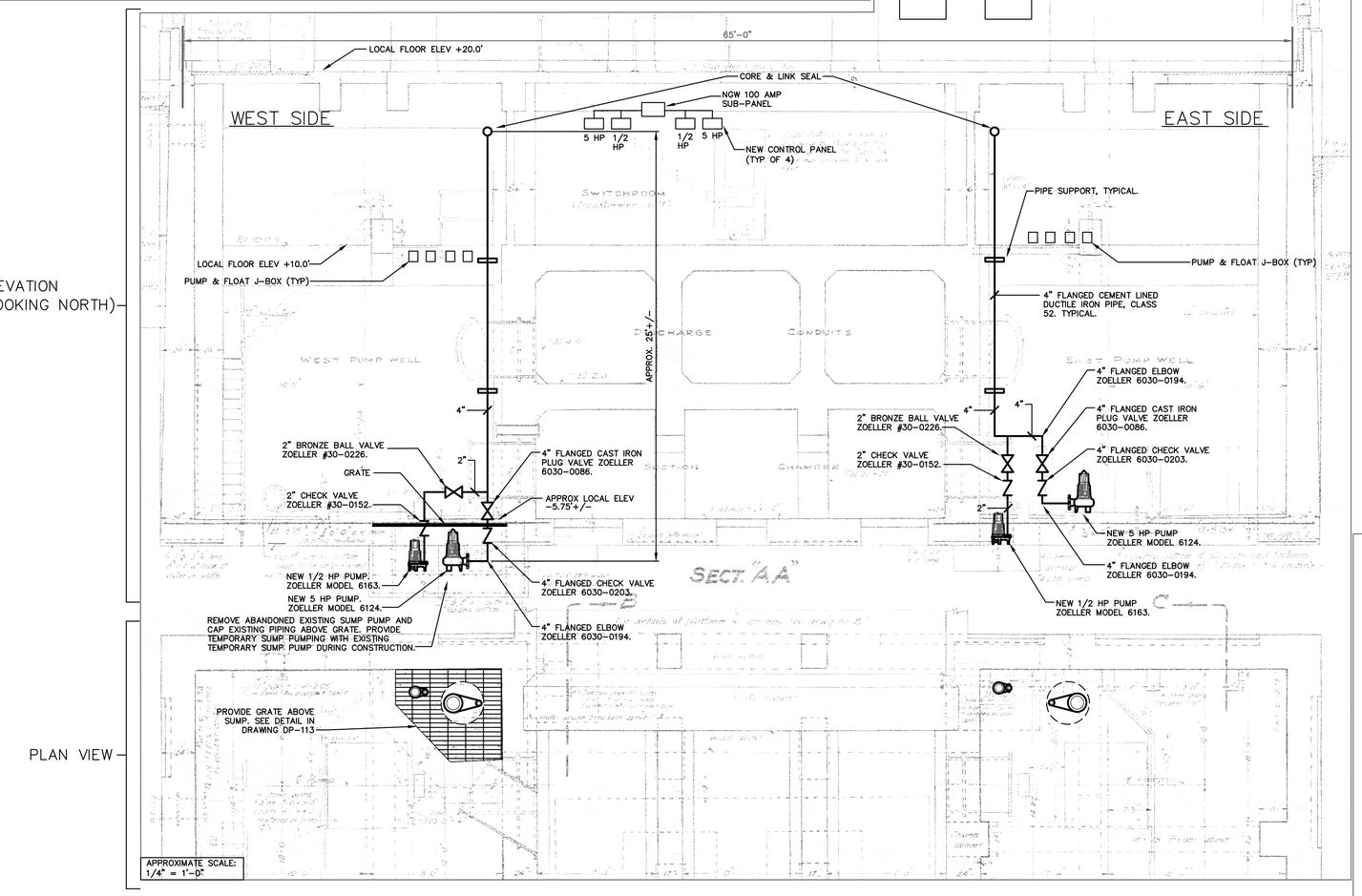
SM-301



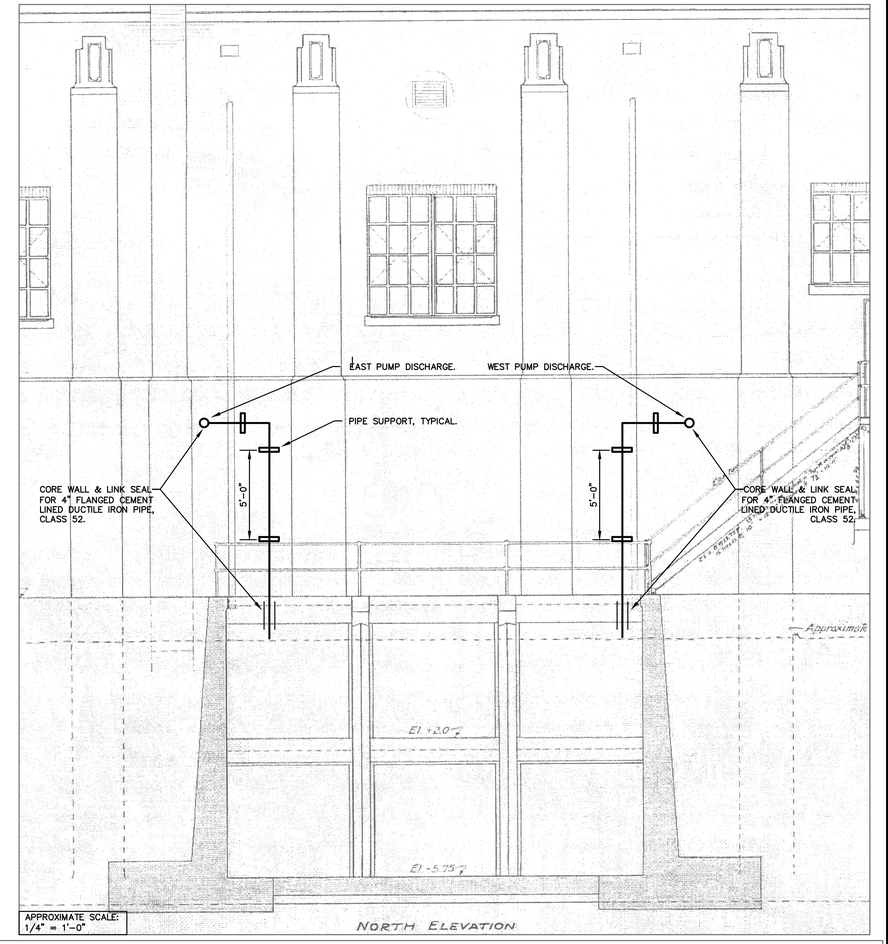
ELECTRICAL SUMP PUMP DETAIL

SCALE: NONE



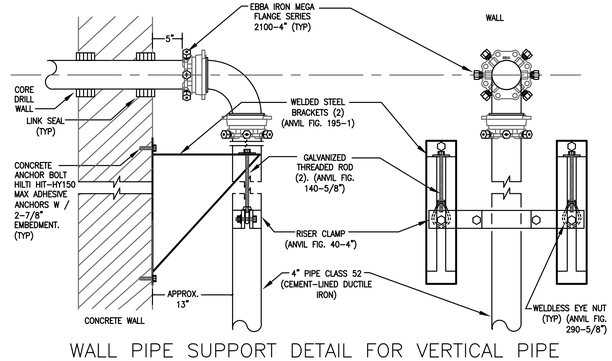


APPROXIMATE SCALE: 1/4" = 1'-0"



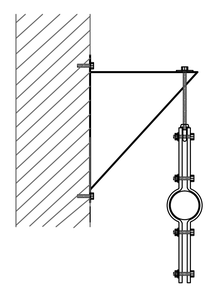
NORTH ELEVATION

APPROXIMATE SCALE: 1/4" = 1'-0"



WALL PIPE SUPPORT DETAIL FOR VERTICAL PIPE

SCALE: 1" = 1'-0"



WALL PIPE SUPPORT DETAIL FOR HORIZONTAL PIPE

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SEAL

SEAL

SCALE: AS NOTED	
HORZ.: NTS	
VERT.: NTS	
DATUM:	
HORZ.:	
VERT.:	

0

GRAPHIC SCALE

CITY OF HARTFORD

SOUTH MEADOWS PUMPING STATION
SUMP PUMP SYSTEM

HIGHEST PRIORITY PUMPING STATION IMPROVEMENTS
CONTRACT# DPW14-43

HARTFORD CONNECTICUT

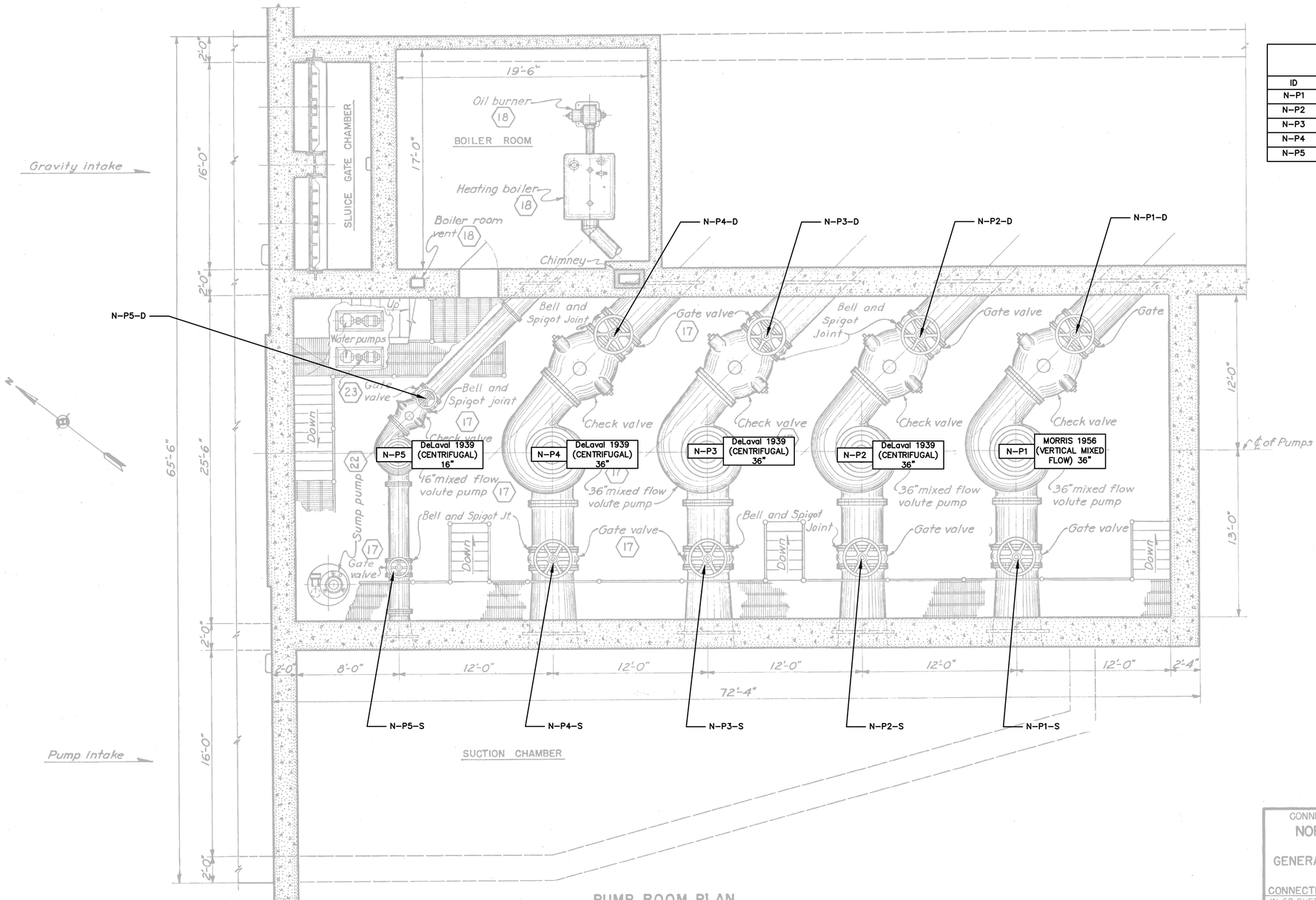
PROJ. No.: 01997279.F75

DATE: JULY 2014

SM-302

File Path: J:\DWG\97\97279\F75\South Meadows\Drawings\01997279F75SM-SM302.dwg, Layout: SM-302, Plotted: Tue, Jun 24, 2014 - 9:55 AM User: ztang
MS VIEW: LAYER STATE: Plotter: DWG TO PDF.PC3 CTB File: FO 2008 MONO COVER.CTB

NORTH MEADOWS PUMP INFORMATION		
ID	NAME	ACTION
N-P1	PUMP 1	N/A
N-P2	PUMP 2	N/A
N-P3	PUMP 3	DISASSEMBLE AND INSPECT PUMP
N-P4	PUMP 4	N/A
N-P5	PUMP 5	N/A



PUMP ROOM PLAN

SCALE 1"=1'-0"

NOT TO SCALE

DATE	REVISION	REV.BY	CK.BY	APP.BY
12-31-45	As built revisions			

CONNECTICUT RIVER FLOOD CONTROL

NORTH MEADOWS PUMPING STATION

FISCAL YEAR 1939 SECTION

GENERAL ARRANGEMENT OF EQUIPMENT NO.2

HARTFORD, CONN.

CONNECTICUT RIVER — CONNECTICUT

IN 62 SHEETS — ~~SCALE 1/4 IN. = 1'-0"~~ — SHEET NO.46

U.S. ENGINEER OFFICE, PROVIDENCE, R.I. FEB. 1939

SUBMITTED: Thad H. Nichols, SENIOR ENGINEER, HEAD, DESIGN SECTION

APPROVAL RECOMMENDED: D'Bourke, PRINCIPAL ENGINEER, CHIEF, F.C. ENGINEERING DIV.

APPROVED: W. Wheeler, LT. COL. CORPS OF ENGINEERS, DISTRICT ENGINEER

DESIGNED: A.J. Krafcher, ASSOC. ENGINEER

DRAWN BY O.F. TRACED BY H.C.J. CHECKED BY S.R.L.

FILE NO. CT-4-1294

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: NTS
VERT.: NTS
DATUM:
HORZ.:
VERT.:
0
GRAPHIC SCALE

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

CITY OF HARTFORD

NORTH MEADOWS PUMPING STATION
PUMP INSPECTION

HIGHEST PRIORITY PUMPING STATION IMPROVEMENTS
CONTRACT# DPW14-43

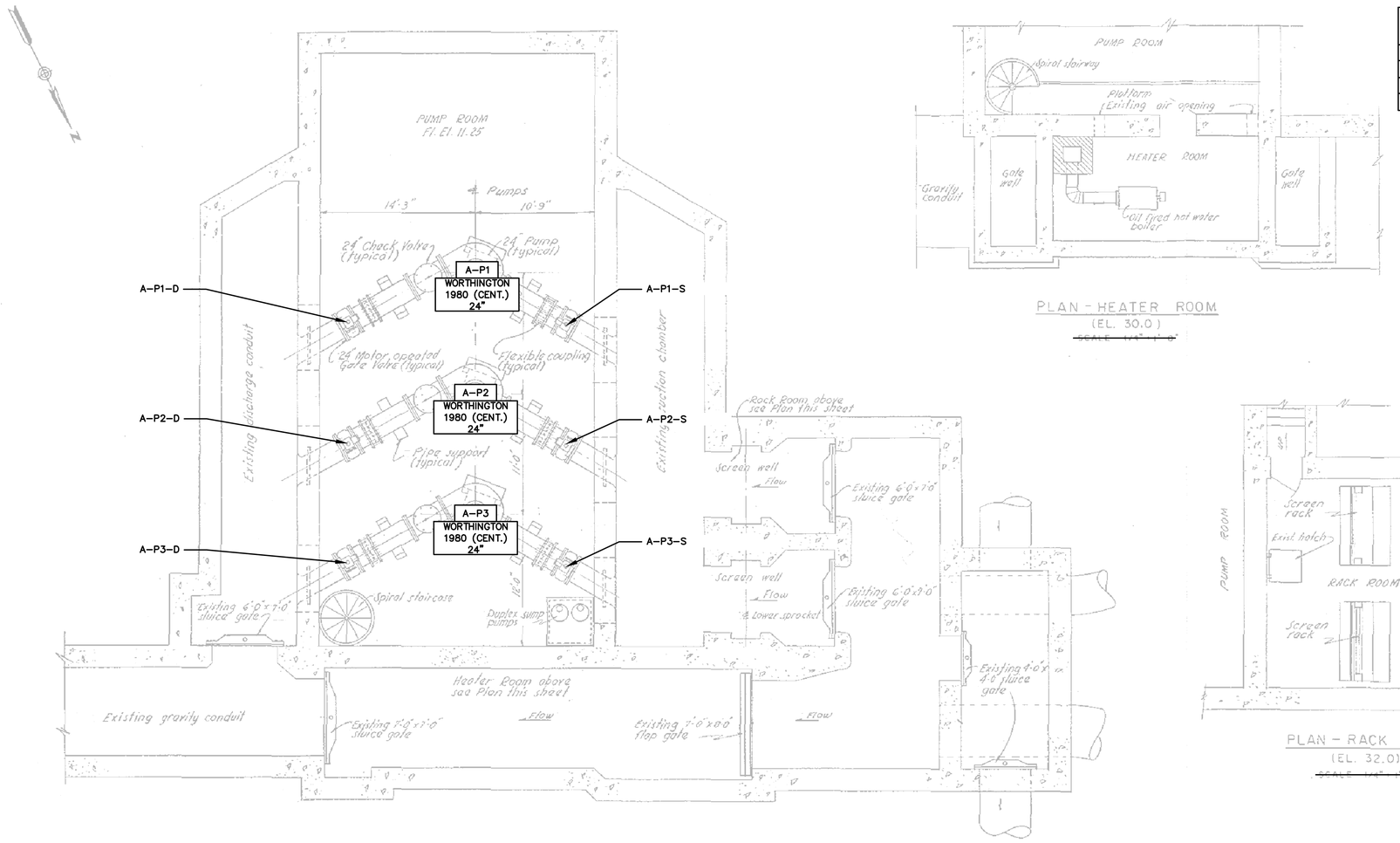
HARTFORD CONNECTICUT

PROJ. No.: 01997279.F75
DATE: JULY 2014

NM-301

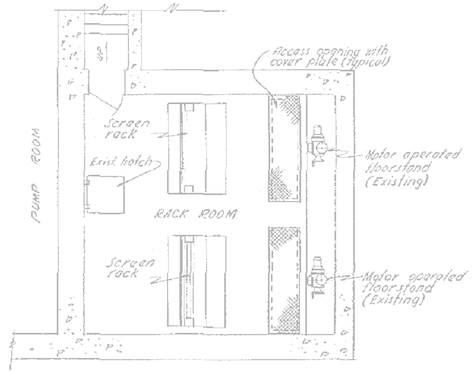
ARMORY PUMP INFORMATION

ID	NAME	ACTION
A–P1	PUMP 1	N/A
A–P2	PUMP 2	DISASSEMBLE AND INSPECT GEARBOX
A–P3	PUMP 3	N/A



PLAN – PUMP ROOM
(EL. 11.25)
~~SCALE 1/4"=1'-0"~~

PLAN – HEATER ROOM
(EL. 30.0)
~~SCALE 1/4"=1'-0"~~



PLAN – RACK ROOM
(EL. 32.0)
~~SCALE 1/4"=1'-0"~~

GRAPHIC SCALES
1/4"=1'-0" 0 2 4 8

SAFETY PAYS

REVISION	DATE	DESCRIPTION	BY

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORPS OF ENGINEERS
WALTHAM, MASS.

DES. BY	DR. BY	CK. BY
SUBMITTED		
CHIEF, SECTION		
APPROVAL RECOMMENDED		
CHIEF, TECH. ENG. BRANCH		
REVIEWED		
PROJECT ENGINEER		
APPROVAL RECOMMENDED		
CHIEF BRANCH		

WATER RESOURCES DEVELOPMENT PROJECT
PARK RIVER LOCAL PROTECTION
ARMORY PUMPING STATION
MECHANICAL
PLANS NO. 2
HARTFORD CONNECTICUT
APPROVED DATE
CHIEF, ENGINEERING DIVISION
SCALE SPEC. NO.
DRAWING NUMBER
SHEET
PLATE 6-6

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: NTS
VERT.: NTS
DATUM:
HORZ.:
VERT.:
0
GRAPHIC SCALE

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

CITY OF HARTFORD

ARMORY PUMPING STATION
PUMP INSPECTION

HIGHEST PRIORITY PUMPING STATION IMPROVEMENTS
CONTRACT# DPW14-43

HARTFORD CONNECTICUT

PROJ. No.: 01997279.F75
DATE: JULY 2014

AP-301